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JUNIOR COLLEGE INSTITUTIONAL RESEARCH: THE STATE OF THE ART.

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This monograph on institutional research in junior colleges examines research practices, presents examples, and makes recommendations for organizing the support of such activities. The need for this kind of research is documented and its uses are highlighted. Of 83 randomly selected colleges, 70 reported by telephone interview on their current research projects. Areas of research emphasized most often were (1) student characteristics (in various correlations), (2) faculty, (3) instruction, (4) curriculum and programs, (5) student personnel services, (6) institutional operations, and (7) other topics such as campus environment, drug use, and testing. The four most frequent approaches to research were: (1) observational studies from records or surveys, (2) group comparisons by matched characteristic, by random selection, or by natural or existing group, (3) correlational studies for improvement of prediction and counseling. This report examines 25 recent studies, taken from 28 reports, with comments on the methodology and results of each. (All 28 reports are available from ERIC.) They are reviewed nder the following headings: (1) students, (2) teachers, (3) programs and instruction, and (4) student services. The monograph points out that institutional evaluation is the president's responsibility; it is he who must ask the right questions and see that the answers are sought by a competent research staff. (HH)

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The State of the Art

By
John E. Roueche
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UNIVERSITY OF CALIF.
LOS ANGELES

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FOREWORD

William Allen White said, "Unless the free are brave, they will no longer be free." It takes a brave institution to undertake a continuous and objective self-study of all facets of its operation through properly designed professional institutional research. To keep a college vital requires a knowledgeable and committed faculty and administration working together in developing and implementing recommendations based on sound institutional research. It takes courage to think aloud regarding institutional weaknesses at a time when everyone is critical of higher education and when many question the extent to which it is fulfilling its role in a modern society. It is challenging, almost brazen, to set into motion within the establishment the inevitable conflicts that result in change. Who has the right to tell the professional how the objectives of his field can best be accomplished?

An institution of higher learning that stops growing, improving, implementing, and evaluating is a danger to both society and itself. What right does an institution have to exist when it no longer gives its best in attempting to cope with the increasing complexity of the society it serves? What hope is there for a faculty, either administrative or teaching, that has stopped growing?

The administrators and faculty who assume responsibility for all aspects of campus operation must seek objective and efficient means of carrying out their educational responsibilities. If not, their trustees will probably invite outside consultants to make such evaluations and to direct the major course of education. This would be unfortunate, as those best qualified should be those who are on the scene—not the "one-shot artists."

In preparing for the future, higher education must and will rely more upon institutional research to guide its development. Research will be a necessary instrument in the evaluation of the entire educational program, including such areas as teaching methods, curriculum needs, student characteristics and achievement, faculty, faculty and student relationships, teaching methods, budget, space utilization, enrollment, and administrative effectiveness.

Junior colleges have been relatively slow in establishing professional staff for the investigation of their problems by research methods, but education has advanced from the slow moving "jenny" to the "supersonic jet." It can no longer be flown by the "seat of the pants." The rapidly changing world, with the explosion of knowledge and increase in student population, creates new problems faster than we can understand the old ones. Continuing research must be built in as part of each college's efforts.

In the past five years there have been revolutionary developments in education. Future changes will be even more dramatic. With productive scholarship must come greater cooperation in research. The creation of the Educational Resources Information Center (ERIC), including the Clearinghouse for Junior College Information, is a major breakthrough for implementing cooperative effort. We, in our respective institutions, must make available to ERIC the findings that we have in hand as well as those that will be developed in the future—for the mutual benefit of all.

Research must be continuous and must be shared.

Stuart E. Marsee

President, El Camino College and
President, American Association of Junior Colleges

ACKNOWLEDGMENTS

Funds for the research reported in this monograph were provided in part by the UCLA Junior College Leadership Program, under a grant from the W. K. Kellogg Foundation. Sincere appreciation is expressed to the staff of the Clearinghouse for their assistance and cooperation in completing this study. For research and editorial assistance, gratitude is extended to W. A. Gibson, Hazel Horn, and Ellen Jacobsen. The authors wish to express special appreciation to Arthur M. Cohen and B. Lamar Johnson for reading and criticizing the entire manuscript.

John E. Roueche
and
John R. Boggs

University of California, Los Angeles
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INTRODUCTION

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Both authors are on the Clearinghouse staff. John E. Roueche is associate director; John Boggs is an assistant in the project.

The concept of "institutional research" is examined in the first chapter. Chapter II reviews and interprets selected institutional research reports received at the Clearinghouse. All the documents reviewed have been announced and abstracted in the official ERIC publication, *Research in Education*. (See Appendix A.)

Using a structured interview technique, via long-distance telephone, a survey of eighty-three randomly selected junior colleges was conducted in order to determine the current state of institutional research in the American two-year college. The findings of that survey are reported in Chapter III.

In Chapter IV, the authors attempt not only to evaluate and interpret the state of the art, but also to suggest possible implications for the junior college field.

Junior college institutional research is a topic of particular concern to many groups. The W. K. Kellogg Foundation funded UCLA Junior College Leadership Program has sponsored conferences and publications in the area and has made funds available to conduct the study reported here. The Regional Education Laboratory for the Carolinas and Virginia is especially interested in institutional research and will aid in the distribution of the monograph and in the implementation of its recommendations. Other groups may also find it of value.

This monograph is being published by the American Association of Junior Colleges. The Association has been generous in its support of the Clearinghouse's effort to disseminate information. Our special thanks to members of the Association, to the Leadership Program, and to the United States Office of Education for making possible the production of this report.

Arthur M. Cohen

INSTITUTIONAL RESEARCH: THE CONCEPT

chapter I

BACKGROUNDS

"More research needed" is the concluding recommendation of many journal articles, research reports, conference proceedings, and books that examine the purposes and programs of the community junior college (32).* Institutional research, however, has been recognized only recently as a major need and function in all of American higher education. Most of the institutional research in higher education has occurred during the past decade, although a few institutions have provided for such activities for at least fifty years (6:12).

Before American higher education became the huge enterprise it is today, society seemed indifferent to how institutions used their relatively limited resources. Furthermore, when enrollments and faculty size were generally small, when programs were limited, when costs were less, and organizational problems simple, problems then confronting collegiate institutions were solved by the exercise of administrative judgment and intuition.

Today higher education is big business. This point was clearly emphasized by Brumbaugh in 1960 when he reported that more than 300,000 highly qualified personnel were engaged and approximately $3.5 billion were spent annually to serve approximately 3.5 million students (3:2). These figures are increasing in geometric progression, and it is anticipated that by 1970 at least six million students will be in the nation's colleges. As a consequence of the increased need for funds, efficiency-minded legislators, parents, boards of trustees, and the public are asking whether institutions are getting the maximum value from each dollar expended. Coombs has noted that, measured by its annual expenditures, its rate of expansion, its capital facilities, and the increasing clientele served, education is one of the nation's largest growing enterprises (5:6-7). He suggested that at least two per cent of the nation's education dollar should be spent for research and development instead of the less than one-tenth of one per cent devoted to that purpose in 1960.

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* Bracketed numbers refer to bibliographical entries, pages 63-66.

From a review of recent literature on the subject, one may conclude that the importance of institutional research in collegiate institutions is becoming generally apparent and recognized. Today scores of colleges and universities employ a director of institutional research or someone who handles the job without the title (10:58-72). Institutional research has developed a literature of its own and has acquired a new professional organization, the Association for Institutional Research, which had 230 members in January 1966 (11:452).

However, the research approach to institutional improvement still does not have wide acceptance. For example, a study made in 1958-59 found that only about one-fifth of the land-grant colleges and state universities had full-time coordinators of institutional research (27:28). American industry, in contrast to higher education, relies heavily upon research to guide its development.

RESISTANCE TO RESEARCH

Why has American higher education failed to recognize the importance of institutional research? One possible answer relates to the nature of colleges and universities. From the time of the medieval universities, institutions of higher education have been conservative. Like all human institutions with long histories and traditions, they are fundamentally resistant to change (12). Their faculties tend to go on doing things in the same old, presumably time-tested ways. As a former university president has stated, ". . . faculties accept little responsibility for thinking of education as a whole; they pass on specific educational matters without taking the trouble to inform themselves about education in the large, or they refrain" (8:240).

To the extent that he regards himself as an expert on "education," the individual faculty member often hinders the development of institutional research. In his own field of specialization, he makes judgments on the basis of evidence; he is research minded; he typically withholds judgment until he has examined the facts. In "educational matters," however, personal experience is regarded as an adequate basis for conclusions and practices. Consequently, institutional positions are often taken and decisions made on the basis of assumptions that may never have been tested or that may long since have been proved by research to be without foundation.

Consider, for example, the continued advocacy of certain traditional subjects because they "train the mind," and the corollary, the transfer of training, although psychology has long qualified the validity of such contentions. The almost religious convictions of many faculty members concerning the superiority of small classes, the faculty-student ratio as a measure of institutional quality, the necessity of regular class attendance, and other long-held beliefs serve as examples of the extensive folklore of academia, not validated and often contradicted by the findings of research (22:3).

Indeed, academic procedures have changed little (1:15-16). For the most part classes still meet three times a week, with lectures scheduled for the morning hours and laboratory periods in the afternoon. The academic year still parallels a calendar justified only by an agrarian society of days gone by. These traditional ways may be the best way to do things, but more objective evidence is needed. There may be better ways, but faculties hold fast to their accustomed routines and practices.

Finally, American higher education has not relied upon research because so many research reports have produced inconclusive results (25:1-5). A finding of no significant difference between small and large-class instruction can be used equally by administrative efficiency experts or by those instructors who prefer small-class instruction. Similarly, many well-designed research studies yield statistical differences of such scant importance that they are of no help to either instructors or administrators. A finding that the occupation of a student's father is positively related to his achievement in English 143 is not likely to point to the solution of practical problems.

What are some pressing problems of higher education that merit immediate attention? Consider the following examples:

1. To what extent are students enrolled in programs compatible with their interests, abilities, and preparation? To what extent is talent wasted by poor programing?

2. Why do students withdraw from college before completing a program? What could—or should—be done about it?

3. What motivates students toward educational objectives?

4. What evidence suggests that the lives of students are better and more productive as a result of general education requirements?

5. How can the college and community increase their cooperation for the betterment of both?

6. Of what value to faculty are such things as fall faculty conferences, student assistants, and seminars in the improvement of teaching?

7. On what bases are grades awarded? Can those bases be improved?

8. In what direction do student interests change during their first two years? Is there a relationship between interest change and pattern of courses followed? Specific courses?

Institutions presently answer these questions in a variety of ways. A frequent approach is through applied logic from a stated or assumed premise (26:4). For example, the library is assumed to be the heart of the college; therefore, all courses provide for periodic trips to the library. Or, since it is difficult to conceive of an independent study program without intensive library use, the existence of one is proof of the other. Again, at a college with low student-faculty ratio, it is assumed that students have available and make use of their instructors for assistance with academic and personal problems. A similarly developed rationale determines that students need English, American history, chemistry, and mathematics in their freshman year. Also, an educated person is presumed to know several languages, an assumption which then validates the foreign language requirement.

Questions are sometimes answered by hunch or intuition, based on fugitive information (4). When students comment on the effectiveness of their English professor, the dean concludes that this particular instructor is doing an excellent job of teaching. Conversations at the Chamber of Commerce meeting convince the college president that his institution is providing for the cultural needs of the community. The business manager tours the grounds and concludes that the institution is maintaining a "favorable public image." The two students who win fellowships to the university reinforce the belief that the English department is outstanding. And the sight of several couples necking at a college dance convinces the dean of students that student sexual promiscuity is on the increase.

Questions are also answered through discussions in committees and informal groups whose members pool casual information. Thus, a curriculum committee decides after one brief meeting that the college should establish an independent study program. After reading the latest salary figures in the *AAUP Bulletin*, a faculty welfare committee recommends a 50 per cent increase in local faculty salaries. An informal discussion with department representatives in the faculty lounge convinces the president that faculty morale is higher than ever.

Problems are also solved by individuals on the basis of accumulations of inadequate data. A dean collects grade distributions from the faculty and, in view of the variances, decides to limit the proportion of A's and B's that can be awarded without prior approval. At many institutions, routine collection of course enrollment data permits the registrar or dean to delete from the curriculum upper-level courses that do not enroll over five students and lower-level courses that attract fewer than ten students. Data on student enrollment in chemistry for the past five years are used for determining classroom size in the proposed chemistry building.

All of these techniques are used and many are quite valid for certain purposes. If learning to live with others in a residential situation is judged desirable, then the need for residence halls on campus is clear. Hunch and intuition are certainly of value. For example, the college dean who has been in his present position for twenty years may know the character of his institution so well that most of his decisions are sound. Also, committees of people who bring different skills and knowledge to bear on a common problem can clarify it and can very likely produce a reasonably valid solution. The appropriate use of data by either a single administrative official or by groups has its place. A college considering more refined and rigorous methods of answering its fundamental educational problems can never expect to avoid completely the less rigorous methods of analysis and judgment (23:2). Rather, it can add greater objectivity to its prevailing patterns and techniques by greater emphasis on the systematic collection and use of quantifiable data.

THE NATURE OF INSTITUTIONAL RESEARCH

Typically, institutional research is directed toward the important problems of the individual institution, but there is a tendency to assign to the research officer the responsibility for answering all questionnaires and compiling statistical reports. The mere compilation of readily available data cannot be labeled "institutional research." Similarly, institutional research officers are often designated responsibility for procuring federal funds (writing proposals) for various institutional programs. Only on rare occasions does this activity bear any resemblance to institutional research. While these tasks might properly be under the aegis of the research director, they are no substitute for genuine research activity.

Institutional research is problem oriented and can be just as specific and practical, or general and theoretical, as the competency of the researcher allows (1:13-14). By definition, institutional research consists of those systematic and organized fact-finding activities within a collegiate institution focused upon current problems and issues with institutional improvement as the anticipated outcome (40:12). Brumbaugh has described it as "research designed to improve institutions of higher learning." He states that the key to effective administration is the ability of the college president and his staff to ask the right questions and to find the right answers, a process that inevitably must take into account all the relevant and factual data that only institutional research can provide. He cites areas in policy formulation, planning, administration, and evaluation where the use of research findings is indispensable (3:3).

Stickler has defined institutional research as that which is directed toward providing data useful or necessary in the making of intelligent administrative decisions and/or for the successful maintenance, operation, and/or improvement of a given collegiate institution (38:342). All studies that an institution makes about itself in order to improve the institution or any part of its operation may be defined as institutional research (31:20-22). While there is probably no intent in these definitions to minimize the importance of basic research, the practitioner is concerned with "action" (31:20). Institutional research is usually "applied," or "operations" research, for it is concerned primarily with solutions to the current or impending problems of the institution; it grows out of the need for data to make intelligent and objective decisions regarding immediate or anticipated problems (30:9-22).

It is important to recognize that the need for institutional research is as important and urgent in the junior college as it is in the four-year institution. While each collegiate institution is unique, all must determine and develop educational programs, provide for fiscal responsibilities, and be aware of changing student needs. All institutions must plan to accommodate both short and long-range programs, to study the staffing needs of the institution, and to meet the changing needs of society (24:24-25). Continuous attention must also be given to the instructional staff, facilities, library, and other instructional areas, as well as to student personnel services and activities. Administrators must always be aware of the financial support of the college, of the effectiveness of the administration, and of its duties of liaison between the college and the community. In brief, a rationale for institutional research can be found in every aspect of the two-year college's operation.

JUNIOR COLLEGE INSTITUTIONAL RESEARCH: A REVIEW

chapter II

Junior college institutional research studies are described in this chapter. The documents reviewed here were selected from those institutional research reports received and processed at the ERIC Clearinghouse for Junior College Information (see Appendix A).

A brief description of research approaches used by junior colleges is presented, followed by a review of available institutional research reports with these studies described in terms of frequency, comprehensiveness, and procedures.

RESEARCH APPROACHES

Four traditional methodologies are represented by junior college research reports. First, there are "observational studies," which obtain data from records or surveys. These studies, the most common, allow for educational decision making that employs more adequate evidence than was available before the study. For example, the counseling of transfer students is improved by the results of a survey of transfer policies of senior institutions. Also, the value of a given vocational curriculum can be more accurately assessed through the use of a survey report of graduates from that curriculum.

A second traditional approach represented in junior college institutional research is the use of "group comparison." The following procedures are typically used: (1) the comparison of groups matched on some characteristic; (2) the comparison of randomly selected groups; and (3) the comparison of "natural" or already existing groups. Group comparisons are used to observe the effects of a given treatment (e.g., instructional procedure) upon various kinds of groups, as well as the effects of various treatments upon the same kinds of groups. When natural or existing groups are used, differences in the characteristics of the groups are often analyzed to determine factors that may account for the behavioral or other differences between the groups. An example is the analysis of parental aspirations of over- and underachievers. The value of group comparisons is disclosed by the statements of contrast that result. The following may be examples of such statements:

In this situation, students learn more English with the programmed material than with the conventional text. For this course, a difference in class size is not reflected in student performance.

"Correlational studies" represent a third approach. Frequently, correlational studies are used in the junior college to improve predictions of college success or failure on the basis of standardized tests or locally constructed test scores. These studies are designed particularly to improve the accuracy of selecting students for special programs, classes, or counseling.

A final research approach, most typically employed for evaluation, is the "pre- and post-observation." Pre- and post-observations are used to assess student changes during a single class, a given program, or a total two-year experience. An example of this approach would be the administration of a test before and after a remedial English class, to determine the increase in student reading comprehension.

These four methodologies are among those most often used by junior colleges to study a variety of problems. Examples of these methodologies, with a description of the research and research results, are reviewed under the following headings: (1) students; (2) teachers; (3) programs and instruction; and (4) student services.

INSTITUTIONAL RESEARCH EXAMPLES

The institutional research reports selected for review were processed at the ERIC Clearinghouse for Junior College Information.[2]

In terms of research emphasis the studies reviewed are representative of junior college institutional research. Results of the national survey on junior college institutional research (reported in Chapter III) corroborate the fact that more research emphasis is on "the student" than any other topic. In junior colleges, the modal emphasis is "the student." Survey results indicate that the topics of "faculty," "student services," and "instruction" receive little research emphasis. This trend is also noted in the present chapter.

Although the studies reviewed are representative in terms of emphasis, they may not be representative of junior college institutional research reports. This is suggested by the fact that the Clearinghouse receives final reports for a small percentage of the studies actually conducted by American junior colleges. A 45 per cent sample of these institutions (see Chapter III) reported that they had completed 1118 institutional research studies in the past two school years. Accordingly, the estimated total number of completed studies for all American junior colleges is 5,100. This number is enormous when compared to the number of institutional research reports (approximately fifty) that are available for dissemination through ERIC. The studies reviewed are not typical of institutional research since many of the studies received by the Clearinghouse fail to meet criteria for ERIC dissemination because of poor quality (design, methodology, or reproduction) or ungeneralizable findings. Hence they are not processed by the Clearinghouse.

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[2] See Appendix A for further information regarding these reports and how copies may be obtained.

STUDENTS

Eleven studies (1-11) are reviewed under the heading "Students." Study 1 deals with the relationships between hours employed and college achievement; Study 2, with factors related to the success of students previously disqualified at some other institution; and Study 3, with the relationship between parental perception of students and student success. Study 4 concerns students who applied and met admission requirements but did not enroll. The next two (5 and 6) are follow-up studies, Study 5 investigates the dropouts of an adult training program, the other (6), of graduates of a given year. Studies 7 through 9 are concerned with student testing. Studies 7 and 8 examine English, and Study 9, mathematics tests. Studies 10 and 11 examine a series of tests, Study 10 dealing with various relationships between test scores and achievement in a remedial psychology class, and 11, with vocational placement.

STUDY 1. Relationships Between Student Employment and Achievement (ED [illegible])

For assistance in counseling and advising employed students, San Joaquin Delta College, California, examined the demographic profile of working students and, [illegible] hypothesized, [illegible] found that "there is no significant difference in the academic achievement of working and nonworking students." Efforts were made to control factors of academic aptitude and of variations in number of credits taken per student. Both factors appeared to influence achievement. During the eighth week of the [illegible] fall semester, [illegible] students were surveyed in order to determine the average number of hours worked per week. Each of the [illegible] students was placed in one of five groups: (1) none; (2) 1-10 hours; (3) 11-20 hours; (4) 21-30 hours; and (5) more than 30 hours. Each group was separated according to [illegible] School and College Ability. Test scores and the number of credits taken were used to equate the five groups in academic aptitude. Results indicated that the percentage of students earning less than a C average steadily increased as the hours of employment increased. The trend was accentuated for students working over 30 hours per week. The [illegible] [illegible] were used to [illegible] the study. Uncontrollable variables that limited the accuracy and thus the reliability of the study were student motivation, time spent in commuting, and the nature of the employment.

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9. Other comments you may wish to make.

Noted differences between the responses of parents of achievers and of underachievers suggested five hypotheses:

1. Hypothesis 1, related to Question 2, states that parents of achievers clearly describe their son's vocational plans and interests, whereas parents of underachievers see their sons as having vague and unspecified plans.

2. Hypothesis 2, related to Questions 5 and 6, stated that ". . . parents of achievers list one of their son's assets [as being] a great deal of drive, a desire to succeed . . . while parents of underachievers do not."

3. Hypothesis 3, also related to Questions 5 and 6, described the types of assets and liabilities used by parents to describe the students. For achievers, parents use academic assets and liabilities; for underachievers, they emphasize social and personality traits.

4. Hypothesis 4, pertaining to Questions 3 and 4, stated that parents of achievers list their son's academic accomplishments.

5. Hypothesis 5 characterized the way the parents answered the questionnaire. Parents of achievers seem interested, answer with clarity, and make reference to their son by name, while parents of underachievers seem less interested, use vague answers, and seldom refer to their son by name.

All five hypotheses were tested on freshmen—nineteen achievers and twenty underachievers. Second semester grade point averages and IQ scores, both in standard scores, were used to select the subjects. Differences in the two standard scores for the entire freshman class were computed and ranked. The achievers were selected from the lower quartile of the rank; underachievers, from the upper quartile. A psychologist and a social worker, working independently and not knowing which questionnaire had been completed by which parent, evaluated each questionnaire and predicted whether the student was an achiever or an underachiever. The predictions were made on the basis of the five hypotheses, for which there was an average of 84 per cent agreement in predictions between the two evaluators. A Chi-square statistic was used with each hypothesis to determine whether the evaluators predicted a larger number of achievers and underachievers than would have been expected by chance. Chi-square results indicated that Hypotheses 1 and 3 provided greater than chance predictions. To see whether the differences in parental responses were based upon actual ability differences among the sampled students, the IQ scores of achievers and underachievers were compared. No such differences were noted.

In summary, the study indicated that a relationship between achievement and parental perceptions exists and that factors other than ability are importantly related to school performance. Parents of achievers saw their sons as having specific goals that required academic training; parents of underachievers saw their sons as undecided or as pursuing goals that required little academic achievement. Achievers were described with assets and liabilities in terms of academic qualities; underachievers, in terms of personality and social ability.

STUDY D: Characteristics of Nonenrolled, Qualified Applicants (ED 014 961)

Modesto Junior College, California, noted a significant number of applicants who had completed admission procedures but had not enrolled in the college. Such applicants, numbering 161 for the fall semester of 1966, were studied to provide information for an appraisal of admission procedures. (Placement tests and biographical inventories were used for background information on high school coursework, geographical area of residence, and the type of college courses in which they were interested.) The same information was obtained for the 1966 fall semester applicants who had later enrolled and also for those who had enrolled and dropped out during the first semester. Comparisons were then made among the three groups—the nonenrolled, the enrolled, and the dropouts.

There was little reason to believe that enrollment in another college was the reason for nonenrollment at Modesto Junior College, since 98 per cent of the nonenrolled were ineligible for admission to any other college.

No differences in test scores were noted between the nonenrolled students and the dropouts. The enrolled students had significantly higher test scores than the other two groups. Financial problems were most common in the nonenrolled group, 42 per cent of them claiming that they had to work to remain in college. Only 30 per cent of the enrolled students had to work. A higher proportion of the enrolled students lived at home and were entirely supported by their parents. These financial problems among the nonenrolled led to the suggestion that the college maintain a financial-aid program that would include job placement.

STUDY E: Dropouts from an Adult Vocational Training Project (ED 011 927 and ED 011 180)

Dropouts from an adult training program, the New Hope Project, were studied at Modesto Junior College. The project entailed prevocational courses in trade and industrial, business, and agricultural occupations. Dropouts from the original enrollment of 1,000 were placed in one of three groups, based on the following reasons for dropping out:

1. Work—those who had discontinued their program to accept employment

2. Missing elements (inability of the program to handle special and severe problems)—those who had left because of character or mental problems, marriage, pregnancy, injury and/or illness

3. Program failure—those who had dropped out because of lack

of interest, inability to make progress in the program, and/or poor attendance.

Of the 1,000 enrollees, 28 per cent, or 280 of the students, dropped the program. Reason one, work, accounted for 21 per cent; reason two, missing elements, 37 per cent; and reason three, program failure, 42 per cent of the dropouts. The latter group represented 12 per cent of the total enrollment.

The study concluded that it was within the program's ability to prevent the program failures, and that the various vocational programs should determine specifically the reason for dropouts. A future study was recommended to determine how to identify the potential dropout and prevent such attrition.

The dropouts were further studied through employment service data (ED [illegible]). The second part of the study was to determine the effectiveness of the New Hope Project. The rate of employment for the 280 dropouts was from 63 to 88 per cent. The rate of job turnover was high. Approximately half of these students entered jobs related to their study program. One-third of the students were placed through the project; only 13 per cent through employment services.

Their average earning power was $1.62 per hour, higher than the average wage in the students' subculture. The students who had dropped out during the prevocational phase of the project and had received no vocational training seemed as successful in terms of placement as did students who had received some training. It was recommended that employers be more involved in evaluations and that experimental studies be undertaken to compare the effectiveness of vocational programs that emphasize skills and those that develop basic work habits and attitudes.

STUDY F: Follow-up of Graduates (ED [illegible])

Chicago City College used a follow-up study of its 1965 graduates to help determine the value of CCC education. Of 1,250 graduates, 895 responded to a questionnaire survey. Eighty-two per cent of them had continued their education in some manner. At the time of the survey, 59 per cent were attending senior institutions. From the remaining 41 per cent, the many negative responses to two items suggested a need for a more critical look at CCC programs.

5. Are you working in a job for which you were especially prepared by your CCC curriculum choice?
6. Did your CCC education give you skills usable in this job?

Approximately two-thirds answered "No" to the first question; one-third answered "No" to the second. Of the 895 respondents, 684 had applied for admission to a senior institution and 95 per cent of them had been accepted. The survey also showed a high consistency in curriculum choices—CCC graduates attending senior institutions tended to follow the same programs they had at CCC.

STUDY G: Verbal and Quantitative Aptitude and Achievement (ED 012 580)

The College of San Mateo investigated two questions concerning the School and College Ability Tests and the Cooperative English (Placement) Tests:

1. How well do high verbal aptitude scores predict grades in subject areas requiring verbal skills?

2. Do differences in measured verbal and quantitative aptitudes predict differences between grades earned in subject areas requiring verbal skills and those requiring quantitative skills?

Subjects for the study were 200 students who had average verbal scores for both tests at the 75th percentile or higher and who had completed their first semester at the college. All subjects had completed at least 6 units, 3 of them in English 1A.

In the study no correlation was noted between the highest percentile scores (95 to 99) and performance in English, social sciences, and foreign languages. Percentile scores between 85 and 95 were indicative of superior grades in highly verbal courses. As a group, the 200 students who rated at the 75th percentile and above performed no better than other students in English 1A and generally had English 1A grades lower than their grades in other courses. High quantitative aptitude was slightly indicative of better-than-average performance in mathematics and science. Differences of fewer than 30 percentile points between high verbal and low quantitative scores were not reflected in performance across high verbal and high quantitative courses. Except for students with higher quantitative than verbal aptitude scores, the members of the sample received the highest percentages of A's and B's in the social sciences.

STUDY H: Tests and English Placement (ED 011 198)

The English Department at Los Angeles City College examined the usefulness of the Cooperative Test of English Expression for placing students. Fifty-eight remedial English students and 158 English 1 students completed the School and College Ability Test (SCAT) and the English Expression Test.

Results showed that the SCAT was of no value in predicting remedial English grades and of little value in predicting English 1 grades. The Cooperative English Expression Test showed more predictive validity for both remedial English and English 1 grades, correlations being .56 for the former and .48 for the latter.

STUDY I: Predictors of Success in Mathematics (ED 011 798)

The Mathematics Department at Pasadena City College, California, questioned the relative value of several measures for predicting success or failure in five courses: Mathematics C8 (introductory algebra); Mathematics 1 (intermediate algebra); Mathematics 6 (also intermediate algebra); Mathematics 5A (college algebra and trigonometry); and Mathematics 5B (analytical geometry and calculus).

The general policy of the department was to use its own qualifying placement tests. These tests plus two other measures, high school grade point average and average grade in previously taken mathematics courses, were used in the study. The three measures were correlated with final grades in the five courses. The average grade earned in previous mathematics courses was the measure that correlated highest with final grades in Mathematics Q1, 1, and 2; the respective correlations being .28, [illegible], and .40. Final grades in Mathematics 4A and 5A correlated highest with the department's qualifying placement tests, correlations being .31 and .33 respectively.

STUDY [illegible]: Relationships Among Test Variables for Low Achievers (ED [illegible])

At Los Angeles City College, sixty-four randomly selected students under twenty-two years of age and scoring in the lowest decile on the School and College Aptitude Test (SCAT), were placed in a remedial program that included Introduction to Psychology (Psychology 30). A correlational study was conducted to answer the following questions:

1. To what degree are selected aptitude, achievement, and motivational measures related to Psychology 30 grades?
2. To what degree are selected aptitude and achievement measures related?
3. To what degree are selected motivational characteristics related to aptitude and achievement measures?

Table 1 lists the aptitude, achievement, and motivational measures used:

Table 1

PSYCHOLOGICAL TESTS AND INVENTORIES

Aptitude	SCAT Total
	SRA Verbal Total (Timed)
	SRA Verbal Total (Untimed)
	SRA Nonverbal
	General Aptitude Test Battery "G"
	Progressive Matrices
Achievement	California Reading Test (Vocabulary and Comprehension)
	SRA Placement Test for Reading for Understanding
	Stanford Diagnostic Phonics Survey
	Brown-Carlsen Listening Comprehension Test

Motivational Measures	Edwards Personal Preference Schedule Study of Values Survey of Study Habits and Attitudes

Nineteen measures, eighteen from the above tests and inventories, plus Psychology 30 grades, were intercorrelated for males, females, and the total group. From 171 correlations, forty-seven were significant for females and eleven for males.

For the total group, aptitude and achievement scores appeared to be highly related to Psychology 30 grades. For males alone, the relationship was not present. Aptitude scores on the General Aptitude Test Battery were significantly related to achievement test scores for females, but not for males. Aptitude and achievement scores had very limited relationships with motivational scores. For the total group, the "need for order" negatively correlated with grades, achievement, and aptitude scores. Significant correlations were also noted between achievement and aptitude scores and heterosexuality, endurance, aesthetic value orientation, and needs for intraception. For males, heterosexuality and intraception showed the greatest relationships. Three scores, theoretical, aesthetic, and religious—taken from the Study of Values—showed significant relationships. Theoretical scores for males were negatively correlated with scores on the *Placement Test for Reading for Understanding*. Males had a positive correlation between the reading test and religious scores. Females had a positive correlation between aesthetic scores and listening comprehension scores.

STUDY 8: Test Batteries and Vocational Placement (ED 014 [illegible])

During the past fourteen years, Los Angeles Trade-Technical College has employed measures of individual traits and separate factors of intelligence to develop test batteries for use in vocational placement. Some fifty-five batteries have been developed through the annual testing of over 5,000 applicants with a core of twenty-one separate tests. Scores from the core tests were correlated with instructor rating of student performance. Test scores or partial scores with the best predictive power for a given vocational curriculum were grouped to form a battery. The predictive power for each battery was validated by using the battery with another group of students in the same vocational curriculum. Three recently completed batteries with respective partial and multiple correlations were as follows:

1. TYPING

Test	r
Dexterity (LATT [illegible], both hands)	[illegible]

DAT Language Usage Part I—Spelling	.48
SCAT Quantitative	.38
Guilford-Zimmerman Aptitude Survey Part IV—Perceptual Speed	.06
Multiple R = .70	

2. FILING

Test	r
SCAT Quantitative	.59
SCAT Verbal	.49
DAT Part VI—Abstract Reasoning	.45
DAT Language Usage Part I—Spelling	.29
Multiple R = .65	

3. OFFICE MACHINES

Test	r
SCAT Quantitative	.46
DAT Part VI—Abstract Reasoning	.40
Employee Aptitude Survey Part IV—Visual Speed and Accuracy	.21
Multiple R = .55	

Several outcomes indicated the success of the testing program: teachers felt that the testing program increased their knowledge of student potential and that there was a decrease in class disruptions, in dropouts, and in the number of complaints of discrimination.

STUDENTS: A SUMMARY

Two of the student studies, B and C, were observational. These studies illustrated two methods of obtaining descriptive data: the use of a survey questionnaire and the use of school records.

Group comparisons were made for Studies A, D, and E, with three methods for designating the groups represented. Study A investigated the effects of employment on grades and used the variable "hours worked per week" to form five groups. Additional student information—SCAT total scores and credits taken—was used to strengthen the method of comparison by controlling for other factors possibly related to grades: school "workload" and academic potential. Study D examined the possible alteration of admissions policies for groups: nonenrolled applicants, enrolled applicants, and dropouts. To determine if an adult education program could be modified to decrease the number of dropouts, students in Study F were grouped according to their reasons for dropping out.

Study G illustrates how responses to open-ended questions can be used for experimental data. Criteria were predetermined for judging the parents' responses. The reliability of the judgments was then checked by comparing the results of two judges working independently.

The remaining studies, C through E, were correlational and used grades and test scores for variables.

None of the student studies used pre- and postobservation.

TEACHERS

Two institutional research studies about teachers (L and M) are reviewed. The first deals with the selection of adult basic education teachers; the second, with student ratings of faculty members.

STUDY L: Teachers for Disadvantaged Adults (ED [illegible])

A systematic study, to provide information useful in selecting basic education teachers for undereducated and unemployed adults, was conducted by Modesto Junior College, California. The objectives of the study were:

a. To identify those characteristics that students, teachers, and administrators consider essential for an effective basic education instructor;

b. To define each of the characteristics in a practical context;

c. To develop instruments to assist in identifying a potentially effective teacher.

Data were obtained from three sources: students, instructors, and administrators. Eighty-five students prepared a written description of each of the instructors, including positive and negative characteristics. To prevent low ability in written expression from distorting the descriptions, the students also participated in group discussions of the "necessary" qualifications for adult basic education teachers. Confidential recorded interviews, averaging several hours in length, were used to collect data from seven instructors. Further, each instructor wrote a description of a hypothetical person possessing the most desirable qualities of a basic education teacher. Each administrator also wrote a description of an ideal hypothetical teacher.

Analysis of the data indicated that the most important single quality for an adult basic education teacher was "the ability to help the student to develop and maintain self-confidence." Understanding, flexibility, patience, practicality, humor, creativity, and care in the preparation of class activities were also considered necessary.

An interview schedule for teacher selection was designed from the findings. Part of the schedule used situations where the interviewer advanced "position statements" intended to refer to "essential" teacher personality characteristics. Responses to the position statements were assessed by the interviewers to determine the interviewer's attitude toward these desirable personality characteristics.

[illegible] 48: Student Evaluation of Teachers (ED [illegible])

In the state-required yearly evaluation of instructors, St. Johns River Junior College, Florida, incorporated student ratings. With an 80 per cent ballot approval by faculty members, the students rated each instructor on personal traits, scholarship, class presentation, and accuracy in evaluating students. Personal traits included appearance, attitude, judgment and positive influence; scholarship was [illegible] based on knowledge of subject. Class presentation referred to planning, organization, and clarity; evaluation of students referred to understanding, fairness, and accuracy. There was also space on the rating sheets for anonymous personal comments, which were then forwarded to the instructor.

For each of the four "rating areas," an instructor received a score from one to twenty-five from each of his students. The scores for each area were then combined to provide a total score for each instructor. A further combination of scores resulted in a score for each academic division. The student rating procedure was conducted a second year, so that the two ratings of full-time instructors for the years 1964-65 and 1965-66 could be compared to gauge improvement of instructors and analyzed to answer the following questions:

1. Which attributes seemed to cause the lowest ratings?
2. Which attributes seemed to cause the highest ratings?
3. Was there significant correlation between high ratings and high grades, or between low ratings and low grades?
4. Do honor students tend to rate the same faculty members lower or higher than the total population rates them?
5. What educational and experience background of the faculty member seems to make a difference?

Fourteen of the fifty full-time instructors who were rated the first year did not return the following year. Ten of these had received total scores placing them in the lower half of the distribution. [illegible]

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(The validity of this continuum as a model is being tested for its possible use as a frame of reference for a five-year research program.)

Golden West's "boldest example of innovative curriculum" is the audiotutorial approach in liberal arts biology. Based on information obtained from Oakland Community College in Michigan and from Samuel Postlethwait of Purdue University, the approach to the course was developed as follows:

1. Defining each goal in measurable terms
2. Establishing a hierarchy of goals for greatest emphasis in the course
3. Determining the time to be given to each unit or goal
4. Arranging units in sequence—weekly, wherever possible
5. Determining the best way to achieve the objective of each unit without regard to mechanics of budget, schedule, or staffing
6. Assessing realistically the obstacles to established objectives and finding ways to achieve the objectives within the ever-present limitations
7. Recording tapes, writing, and preparing workbooks and laboratory materials
8. Securing from the dean for institutional research an identification of the kinds of data that must be assembled to assure adequate evaluation of the program from its inception.

That this approach has increased student learning is supported by three observations made after one semester: Compared with the semester prior to the audiotutorial approach, there was a 33 to 50 per cent increase in course content, a 66 per cent decrease in failure and class dropout rates, and a tripling in the number of A grades.

STUDY P: Evaluation of a General Curriculum Program (ED 012 002)

Forest Park Community College, Missouri, used testing before and after to evaluate the effects of its General Curriculum Program, a program to prepare students for conventional college classes. A programed materials learning laboratory was used to develop reading, writing, and mathematics skills. The effects of both one semester and one year in the curriculum were assessed. Four tests were used to obtain before-and-after scores:

1. SRA Reading Placement Test
2. Wide Range Achievement Test, numerical portion
3. Sequential Tests of Educational Progress (STEP), reading, writing, mathematics, social studies, and science
4. School and College Ability Test (SCAT), general ability.

Data were available to make a comparison, before and after testing, of scores from 165 students who had spent one semester in the program and thirty-two students who had completed one year. One-semester students showed a significant increase on STEP reading scores and SCAT verbal and total scores. SCAT scores were available for only seventy-five of the one-semester students. Students who had completed one year showed a significant increase on eight scores—SRA reading scores, Wide Range Achievement numerical scores, STEP writing, mathematics, and social studies scores, and SCAT verbal, numerical, and total scores. The results indicated significant improvement in basic academic skills. Recommendations included placing more emphasis on reading and cultural enrichment.

STUDY Q: Evaluation of a Remedial Program (ED [illegible])

A Block Program for the spring and fall semesters of 1966 was evaluated at Los Angeles City College. The students who entered the program were under twenty-two years of age, had total raw scores of [illegible] or less on the SCAT, had no previous college background, and had not been educated primarily in a non-English speaking country. Nine units were required for the fall semester of the program, one nontransferable elective being allowed. The nine units were composed of three units of psychology, three of English, and three of speech, including listening and diction. Counseling was provided by instructors, college counselors, and personnel from the California State Department of Employment. Thirty students received one hour per week released time from their psychology course for group guidance.

Tests and questionnaires were used to obtain data in four general areas: academic potential; vocational potential; motivational characteristics; present goals and activities, previous schooling, and family background. Each student was described in terms of these four areas. Block Program students were then compared with a group of students who had not been in the program. On the average, Block students scored at the following aptitude and achievement levels:

1. Compared with the working population, the Block students measured at the 27th percentile in verbal intelligence.

2. Compared with the age seventeen and older population, they scored at the 50th percentile in nonverbal intelligence.

3. Their reading vocabulary and comprehension were generally at the ninth grade level.

4. Their estimated critical reading level was at grade [illegible].

In the motivational and personal areas, the Block students were compared with freshman norms on the Edwards Personal Preference Schedule and the Survey of Study Habits and Attitudes; on the Kuder Preference Record, they were compared with adult male and female norms. Block students on the Edwards Personal Preference Schedule tended to score above average on needs for order, abasement, deference, change, and endurance. Scores were low on the Survey of Study Habits and Attitudes. The median percentile for females represented the 20th percentile for college freshmen; for males, it represented the 45th percentile for college freshmen. On the Kuder Preference Record, both males and females in the Block Program showed low interest in outdoor and mechanical activities.

Males showed high interest in artistic and clerical activities; females, in social service.

The Block Program participants were compared with students selected at random from a group who were "eligible," but who had not been selected for the program. The comparison led to the following generalizations:

1. The initial Block and non-Block comparison groups were of approximately equal size in the spring and fall of 1966.
2. The proportion of students completing each semester and of those beginning it was similar in both the Block and non-Block groups.
3. The proportion returning for a second semester (out of those initially enrolled) was substantially greater for the Block than for the non-Block group.
4. Except for one semester, the grade point average (G.P.A.) was higher for the Block group.
5. The number of units attempted was greater for the Block group each semester.
6. The percentage of students earning C averages or better was greater for the Block group.
7. Of the students in each group attending more than one semester, substantially more of the Block than non-Block group had cumulative G.P.A.'s of 2.0 or higher.

The effectiveness of the Block Program was further supported by a generally favorable attitude toward the school, the faculty, and the program itself.

STUDY 8: Evaluation of a Remedial Program (ED 011 015 and ED 013 613)

Los Angeles Valley College evaluated a remedial program, the Threshold Program, to answer the question, "To what extent does the Threshold Program provide an effective education for students of low academic ability?" The Threshold Program, begun in the spring of 1966 and continued for two years, consisted of three basic classes: English, speech, and psychology. Psychology included an orientation class and a reading improvement class. Students selected for the Program had scored below the 17th percentile on the total scale of the SCAT. Fifty per cent of the students for the 1966 spring semester reported an average outside workload of 20 hours per week. The ratio of males to females was approximately four to three. The evaluation followed these three steps:

1. Administration of parallel forms of standardized achievement tests for pre- and posttesting.
2. Administration of a questionnaire to students in the Threshold Program to sample their reaction to the program and to provide information about Threshold student characteristics.
3. Comparison of academic achievement and persistence of attendees of Threshold classes with control groups, both groups be-

ing selected randomly each semester from the students scoring below the 17th percentile of the total scale of the SCAT.

Results of the evaluation procedure indicated that the Threshold students were handicapped in classes requiring verbal skills. Pre- and post-standardized achievement tests did not indicate significant gains. For two of the three semesters, the dropout rates were higher for the control groups than for the Threshold groups. The dropout rates for the Threshold groups that had started in the fall of 1966 were higher than the rate for the corresponding control group. Total retention rates for all four semesters favored the Threshold group. The percentage of students on probation was higher for the Threshold students than for control students. Also, Threshold students had a higher median grade point average. In general, the pre- and post-testing and group comparisons did not suggest any consistent trend in the Threshold Program, although subjective responses by the students revealed positive attitudes toward it.

STUDY 8: Evaluation of a Remedial Program (ED [illegible])

A remedial program, TRIP, was evaluated at Greenfield Community College, Massachusetts, to see whether seven weeks of intensive reading, English, and mathematics instruction would prepare high school underachievers for success in a two-year terminal program and whether personal-vocational counseling affected student achievement. (Personal-vocational counseling was designed to aid students to select terminal curriculums that were appropriate and compatible with test data.) TRIP entailed a summer program with a 10:1 student-faculty ratio and a detailed curricular outline that allowed for individual differences. Students who volunteered for the program lacked the required grade averages and test scores to meet criteria for admission.

The evaluation procedure followed six steps:

1. The random selection of forty students for the program
2. A random division of the forty students into two groups of twenty each
3. The administration of pretests
4. Student participation in the program, one group with vocational counseling and one group without
5. Administration of posttests
6. A comparison of the academic achievement of the counseled and the noncounseled groups after the first freshman semester.

The procedure followed was limited by not having a control group. Alternate forms, when available, were used for the posttesting. The tests and instruments used included the Iowa Tests of Educational Development; Lorge-Thorndike Test of Intelligence, Level 5; Sequential Test of Educational Progress, Level 2; Davis Reading Test, series 1; Strong Vocational Interest Blank; Edwards Personal Preference Schedule; and the Scholastic Aptitude Test.

Pre- and posttest results were analyzed to determine whether [illegible] was effective in improving academic progress. A t-test comparison for paired groups revealed that students significantly increased their scores on the Lorge-Thorndike Test of Intelligence, the Davis Reading Test, and on the verbal score of the Scholastic Aptitude Test. No significant score increase was noted on the Iowa Test of Educational Development or on the Sequential Test of Educational Progress. Significant results were mostly in the verbal ability category.

Initial test scores for the counseled and noncounseled students were compared with an analysis of variance to locate any original significant differences between the two groups. The analysis did not show any such difference. Posttest scores for the two groups were then compared with an analysis of variance to assess the effects of the personal-vocational counseling. No significant differences were noted between the groups. Analyses were then conducted on those thirty-three of the original students who completed their first semester of college. These further analyses were designed to determine the effects of personal-vocational counseling on the students' first semester grade point averages. Pretest scores and actual grade point averages were used in a regression procedure for deriving a formula to predict grades on the basis of combined test scores. It was noted that predicted grades for the counseled group did not significantly differ from the predicted grades for the noncounseled group. This nondifference suggested that the actual mean grade point averages for the two groups would not differ unless the personal-vocational counseling had an effect. The t-comparison of the actual means of the two groups did not reveal a significant difference. The conclusion drawn was that students significantly increased verbal test scores during the program and that personal-vocational counseling had no differentiating effect.

[illegible] 7. Effect of Class Size on Learning Writing Skills ([illegible])

At Indian River Junior College, Florida, three instructors participated in an experiment on the effects of class size on the learning of writing skills. Each instructor was assigned a section of fifty-six students; two were assigned one section each of twenty-six, and one instructor was assigned two sections of twenty-six. Each instructor employed the same teaching method with the large and small sections. Analytic essays were used for pre- and posttests. The pretest consisted of an analysis of "[illegible]," by [illegible], and the analysis of "[illegible]," by [illegible] completed the posttest. All essays were scored by the [illegible] procedure.

T-tests showed a significant increase in scores for all large and small sections. Contrary to general expectations, small sections did not achieve higher scores on the posttest than large sections. Improvement scores for the large and small sections taught by each instructors were compared and, again, no significant differences were noted. It was concluded that, ". . . given the same quality of instruction, program, and students involved in this experiment, class size up to fifty-six does not seem to be a significant variable in the learning of writing skills."

STUDY 11: Effects of Programed Instruction on English Achievement (ED [illegible])

[illegible]

[illegible]

[illegible]

STUDY 12: The Uses of Amplified Telephones (ED [illegible] and ED [illegible])

[illegible]

carried on conversations with and responded to the questions of the students. For the latter course, a modified overhead projector was used to project the transmitted handwriting.

Student responses, recorded during the last day of the course, were made to evaluate "Americans Talk to [illegible] Contemporary Writers." Two questions during the recorded session elicited written comments for the total course:

1. How would you compare this course in literature with others you have had? What are its strengths? What are its weaknesses?

2. If you were in a position to make the decisions, would you want to have a course like this, using amplified telephone, as a regular part of the curriculum?

Responses indicated enthusiastic approval of the course.

The same class was evaluated through a questionnaire form completed by the faculty members who had attended class. All but one agreed that the course had been "stimulating and worthwhile for the students." Several of them commented that the course had served as a "good motivating device."

STUDY 9: Televised Instruction in Health Education ([illegible])

The College of San Mateo, California, employed televised instruction for a course in health education. A district-owned and operated educational television station was used to transmit [illegible] videotaped lectures, each approximately [illegible] minutes in length. The services of [illegible] students were [illegible] the [illegible] by [illegible]. The [illegible] was [illegible] to [illegible] make announcements, administer examinations, and to answer questions concerning the method of presentation. The [illegible] also had prepared the videotapes and conducted [illegible] lectures to [illegible] of the students.

An evaluative study was planned "to assess the attitudes and opinions of students toward responses [illegible] by educational television and toward health education as taught by educational television." The study followed six steps:

1. Preparation of the [illegible] of the attitude and opinion questionnaire. Several individuals and groups were asked by the [illegible] [illegible] of research and planning for suggestions as to content and structure.

2. A preliminary questionnaire was experimentally submitted to the same [illegible] through the students for their suggestions, and then revised.

3. The revised questionnaire was presented to a group of twelve students. The students were selected from [illegible] of the [illegible] sections by the [illegible] of those sections. The selections were made to provide [illegible] and [illegible] representative [illegible] and [illegible] of [illegible] average, average, and [illegible] average students, as judged by the [illegible].

(a) [illegible]

(b) [illegible]

(c) [illegible]

[illegible]

[illegible]

[illegible]	[illegible]	
	TV Group	[illegible]
(a) [illegible]	[illegible]	[illegible]
(b) [illegible]	[illegible]	[illegible]
(c)		

[illegible]	[illegible]	[illegible]	[illegible]
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valuable staff time and energies, but which are not written up and sent to the Clearinghouse.

Parochialism in institutional research can be justified to the extent that not all studies have to be additions to the body of knowledge upon which all educators can draw. But what excuses can be made for faulty design, inappropriate conclusions, and the steady stream of nonresearch which emanates from many a junior college "research" office?

In an attempt to find the answers to these and other related questions, a national survey of junior college institutional research was conducted. Chapter III reports the findings of this investigation.

INSTITUTIONAL RESEARCH: A NATIONAL SURVEY

chapter III

A national survey of junior college institutional research, conducted by Swanson in 1964, found that fewer than 20 per cent of the junior colleges had formally organized programs of institutional research and fewer than one-third of the colleges surveyed had plans for evaluating their research programs (80). In order to understand the current relative paucity of institutional research studies, a new survey of junior college institutional research was conducted from January through March 1968.*

A stratified random sampling technique was used to select 10 per cent (82) of the 837 institutions listed in the 1967 *Junior College Directory* (16) for inclusion in the survey. The institutions were classified on the basis of control (public or private) and enrollment size. The stratification resulted in six groups of institutions from which samples were taken:

GROUP	CONTROL AND SIZE	NO. SAMPLED
1	Public institutions with an enrollment under 2,000	38
2	Private institutions with an enrollment under 2,000	20
3	Public institutions with an enrollment between 2,001 and 6,000	13

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* Funds for the 1968 survey were provided in part by the UCLA Junior College Leadership Program, under a grant from the W. K. Kellogg Foundation.

7	Private institutions with an enrollment between 1,001 and 5,000	1
8	Public institutions with an enrollment between 5,001 and 10,000	9
9	Public institutions with an enrollment over 10,000	5
	Total	80

By means of a structured interview technique, via long-distance telephone, together with a free-response questionnaire, information was obtained from presidents, deans and/or research coordinators of seventy (88 per cent) of the sampled institutions. (A list of participating institutions is found in Appendix B.)

These data, combined with information collected from the 1960 *Junior College Directory* [17] and *American Junior Colleges, Seventh Edition* [18], were used to answer the following six questions:

1. How many institutional research reports are conducted annually in American junior colleges?

2. What educational areas are most and least often researched?

3. What educational areas would junior college administrators like to research?

4. Who coordinates institutional research at the local junior college?

5. Are the factors of staff size, enrollment size, total gross income, age of institution, and type of control significantly related to the frequency of institutional research studies?

6. What general comments do junior college administrative personnel have in regard to institutional research?

Questions asked and responses received follow:

Question 1: How many institutional research reports are completed annually in American junior colleges?

The seventy participating institutions reported that a total of 150 institutional research studies were in progress at the time and that 118 studies had been completed during the previous two years—a total of 268 studies. That figure suggests that the number of institutional research studies has increased measurably during recent years and that the average number of studies per institution per year is 1.1. The range of reported studies was from zero to thirteen with a median of three. Eighteen of the participating institutions had no studies to report.

According to the area of research emphasis, the reported studies were arranged by the seven following groups:

1. Students	student characteristics, designated groups of students (transfer, vocational, remedial, probationary, dropouts, etc.), and relationships between academic performance and other factors (test performance, high school G.P.A., hours employed, reading ability, etc.)
2. Faculty	faculty effectiveness, background, load, salary, training, and organization
3. Instruction	instructional media, materials, and techniques
4. Curriculum and programs	curriculum and program development, content, and evaluation, including vocational, technical, remedial, transfer, etc.
5. Student personnel services	student facilities, counseling and guidance, and placement
6. Institutional operations	accreditation, long and short-range planning, and space and personnel utilization
7. Other	campus environment, drug use, objective tests, change of classes, etc.

The above broad categories were used, since the reports of institutional research studies were generally nonspecific.

Question 2: What educational areas are most and least often researched?

The areas that are most and least often researched are indicated in Table 1 with the areas ranked by frequency of respective studies.

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	Students	[illegible]	[illegible]	[illegible]	[illegible]
2	Curriculum and programs	[illegible]	[illegible]	[illegible]	[illegible]
3	Institutional operation	[illegible]	[illegible]	[illegible]	[illegible]
4	Faculty	[illegible]	[illegible]	[illegible]	[illegible]
5	Student personnel services	[illegible]	[illegible]	[illegible]	[illegible]
6	Other	[illegible]	[illegible]	[illegible]	[illegible]
7	Instruction	[illegible]	[illegible]	[illegible]	[illegible]
	Total	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

RANK	AREA	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]
	Total	[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
	Total	[illegible]	[illegible]

[illegible] [illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

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[illegible]

[illegible]

	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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INSTITUTIONAL RESEARCH: ISSUES AND IMPLICATIONS

chapter IV

THE COMMITMENT

Institutional research in the junior college began only recently. In 1964, Swanson found that only 19 per cent of the nation's junior colleges had any type of formal organization for institutional research, that only four colleges (from a sample of 337) had persons assigned full time to institutional research, and that only 9 per cent of the colleges had separate budget items for institutional research (40: 180-183).

While institutional research has increased measurably in American junior colleges over the past few years, it cannot yet be maintained that junior colleges evidence a firmer commitment to the findings of research than was true several years ago.

Much lip service is paid to the concept of institutional research. For example, almost all of the comments volunteered by those participating in the survey of institutional research reported here were strongly supportive of the activity. The following statements are indicative: "Institutional research is one of the most important things we can do in an open-door institution," and "Institutional research is our most important staff activity." These comments, typical of the remarks made by representatives of the participating institutions, suggest great verbal support for this type of research activity in junior colleges.

There is, however, a noticeable gap between verbal commitment and institutional practice. The study found that junior colleges conduct an average of 1.1 research studies annually, and that 26 per cent of the junior colleges sampled do not participate in any form of insti-

2

tutional research. Only 23 per cent of the institutions surveyed had a staff member whose primary responsibility was the coordination of institutional research, and the overwhelming majority of the institutions do not provide specific budget support for the activity.

An even more crucial aspect of the real institutional commitment to institutional research is the willingness of boards of trustees and college administrators to make educational decisions on the findings of research. On a rational basis it is possible to conceptualize educational improvement as being based ultimately upon research. Ideally, research develops the basic findings, the new truths, the empirical data, upon which educational decisions should be based. An average of 1.1 institutional research studies a year, however, does not suggest that junior colleges typically base their planning and/or decision making on the findings of research.

Institutional research may be called successful if it has some effect on institutional practice (26). For example, Golden West College conducted research to determine if audiotutorial instruction proved as effective as traditional approaches to the teaching of biology. After finding a 33 to 50 per cent increase in course content, a 66 per cent decrease in failure and class dropout rates, and a tripling in the number of A grades, the college had empirical data to support its experiment with this new instructional approach (see Study O). At Los Angeles City College, institutional research showed that low-achieving students in remedial programs did not persist in college for more than one semester (31). Remedial courses were not remediating; therefore, the emphasis and content of the program were changed (see Study Q). In these two schools (and at those described in Chapter II), research resulted in program modifications and served as the vehicle for curricular and instructional changes.

Institutional research fails when its findings are not put into practice (26). For example, all available research indicates that junior college remedial programs do not achieve their primary objective of remediating student deficiencies; yet almost every two-year institution talks about its remedial program in terms of "salvaging human resources," or "democratizing higher education." In general, research has not affected practice in this critical instructional area. Junior colleges are aware that standardized test scores are often inappropriate for placing low-achieving students in certain curricular areas (such as technical, vocational, or remedial), yet institutions continue to use the same old inappropriate data. Research that does not change institutional practice is ineffective and fails.

SHATTERING SHIBBOLETHS

Many shibboleths have been identified to explain why junior colleges do not participate in institutional research. Briefly stated, they are institutional age, insufficient financial support, institutional size, and shortage of qualified personnel. Some newly established junior colleges claim that they do not engage in the practice because they are "too young" to have begun institutional research. On the other hand, older, established institutions maintain they have already "crossed most of their educational bridges." Neither point of view holds much validity. The national survey indicates that institutional age is in no way related to the college's commitment to research. Young and old institutions alike must make educational decisions regularly, and institutional age is neither a help nor a hindrance to the process.

Almost everyone who has written on the subject of institutional research pleads for "sufficient financial support." Some have suggested 3 to 5 per cent of the institutional budget as a good amount to plan an on-going program of institutional research (26). Yet an abundance of money and sophisticated data processing equipment do not of themselves guarantee successful institutional research.

In both small and large junior colleges good research programs (with little budgetary support) can be found. The president does not need a separate budget item for institutional research to get research done. The study found that expenditures do not necessarily relate to better research. Helpful as it may be, money is not the most essential ingredient in a good institutional research program.

Although some large junior colleges operate offices of institutional research staffed with full-time personnel, their endeavors cannot be called "successful" in terms of the previous definition of "success." It is true that such colleges often compile elaborate, well-bound data reports—but typically these data have little significance or value in or out of the college. The mere compilation of data does not constitute institutional research. Data collection may be construed as research activity if the data are being gathered "to provide the answers to the right questions." But questions and data must be coordinated in the research design. If the president is asking the right questions, the odds are pretty good that the answers will be found, with or without funds and/or equipment.

Another misconception regards the shortage of qualified personnel. Many institutions allege they do not engage in research because they do not have "trained research workers on their staff." However, the president can always find someone on his staff to accept responsibility for this most important educational function. In the present survey, presidents identified counselors, deans of admissions, registrars, and deans of students as being responsible for institutional research in their institutions. While most institutions do not have staff members with graduate degrees in educational research, almost every junior college in the nation has faculty members in mathematics, economics, or the physical and behavioral sciences who are more than qualified to research basic institutional problems. These faculty members can provide helpful suggestions on study design, data collection techniques, data treatment procedures, and the appropriate interpretations of findings. It does not take a highly sophisticated research staff to answer the "right questions." Yet the value of wide staff participation in institutional research is obvious (20). Stickler, for example, has observed:

> *Institutional research offices are not agencies unto themselves. Widespread staff participation in institutional research familiarizes the individual with the problems of the college or university, and prepares him to deal realistically and effectively with the research findings* (38:548).

Practically every two-year college in America could develop a viable program of institutional research if it would just utilize the talents of its present faculty and administrative staff.

THE REINVENTION OF THE WHEEL

One of the most serious problems with junior college institutional research at present relates to the areas or subjects studied. For example, approximately half of all institutional research reports relate to the junior college student, and an overwhelming majority of these studies examine the success of the transfer student. These institutional investigations seem inevitably to lead to the conclusion that:

1. Students who enter junior colleges and eventually transfer to senior institutions typically experience a lower grade point average during the first semester following transfer.
2. In most cases, the transfer students' grades recover from the loss that occurs during the final semester.
3. Grade point averages of transfers improve with each successive semester in which they are enrolled at the senior institution.
4. The transfer student who does graduate may take longer to reach the baccalaureate than does a comparable native student.

These research findings tend to corroborate conclusions of national studies on the transfer student and to reinforce research data going as far back as 1928 (31:21).

It appears that junior colleges (like other educational institutions) do not profit from the research of others. The same old question prevails: "How well do our transfer students do at the university?" Junior colleges claim to be multipurpose comprehensive institutions, yet the typical research study focuses on only one segment of the institution's students—those who transfer to four-year institutions.

It is important for all educational institutions to study their students, but the transfer student comprises only one-third of the community college's student body. There is little available research on junior college dropouts or on those who graduate from technical or vocational programs. Junior college institutional research is "hung up" with studies of transfer students.

DISSEMINATION NEEDED

Perhaps junior colleges keep "reinventing the wheel" because they are unaware of the research findings and activities of others. In fact, the entire ERIC project was funded to fill a serious gap in the flow of information among schools or segments of the education community. The United States Office of Education moved into the field of information retrieval and dissemination when it realized that the millions of dollars invested in educational research in previous years had made little impact on practices in schools and colleges. The uncollated research findings and undisseminated reports of one college's procedural successes and failures naturally had had no effect on the decisions made by other educational institutions. Furthermore, college presidents and deans simply do not have sufficient time to seek out answers from the flood of literature engulfing them.

The ERIC Clearinghouse for Junior College Information has as one primary goal the dissemination of junior college institutional research findings. The Clearinghouse is designed to make research findings available quickly and in such form that they may be used in decision making in American junior and community colleges. How successful this dissemination can be depends upon the willingness of junior colleges to share their research successes and failures with the junior college community.

Based on the present survey, it appears that American junior colleges have completed over 1,000 institutional research studies in the past two years, with another thousand "in progress" at the present time. Yet from the research reports received at the ERIC Clearinghouse for Junior College Information, it is evident that no more than five in a hundred institutional research studies are being made available for widespread dissemination. In fact, of the more than 2,500 junior college documents received at the Clearinghouse in the past two years, only 300 have been produced in junior colleges. The present investigation indicates that many two-year colleges are engaging in some research activity, but that dissemination of findings is typically limited to the institution involved.

Every research study cannot end with unqualified success, but failures are just as significant and relevant to the junior college community. The ERIC Clearinghouse for Junior College Information provides for instant dissemination, but the Clearinghouse can make available only those materials that it receives. Junior college presidents can insure improved dissemination by making certain that copies of all institutional research reports are forwarded to the ERIC Clearinghouse for Junior College Information. Institutions can then take advantage of the research successes and failures of others, thereby mitigating the "reinvention" process.

TEACHING INSTITUTIONS

With the community junior college's emphasis on "superior instruction," it might be assumed that the literature would be filled with research on instructional procedures and their differential effects (4). This is not the case. Based on the present survey, only 1.3 per cent of all institutional research studies are in the area of "instruction." In fact, "instruction" ranked last in frequency of studies. No institution surveyed had completed a study on instruction in the past two years and only three junior colleges had research "in progress" on this important topic.

When presidents are asked what problems they would like to research, "instruction" always ranks high. In the present survey, it ranked third, behind "students" and "curriculum and programs." Thirteen per cent of the presidents participating in the study listed it as an area that they wanted most to research. In other representative studies, "instruction" has been ranked as the topic that junior college presidents most wanted to research (31:22).

It would be difficult to explain the gap between expressed presidential interest in instructional research and the paucity of institutional research studies on the topic. Perhaps the gap is indicative of the reluctance of instructors to examine or evaluate their teaching procedures. Whatever the reason, "instruction" is not seriously researched by American junior colleges. The claim of "superior instruction" does not appear to be based upon any research—institutional or otherwise. If junior colleges are going to continue to emphasize the "teaching" function, then instructional research at the institutional level is a must.

THE PRESIDENT IS THE KEY

Before any institutional research can succeed in terms of the previous definition of success, the administration and faculty (but particularly the *president*) must ask the right questions and find the answers. Mayhew defines the task as a "willingness to *use data and act on it*" (26). Other educational enterprises use research data much more consistently. Some researchers, cognizant of the fact that unless there is a prior commitment to incorporate findings in practice the research is doomed to failure, insist on that commitment before designing their studies (30:157-177).

The lack of presidential interest does not always preclude faculty interest or involvement in institutional research. There are numerous examples of research designed and conducted by staff and faculty members without the president even being aware of the activity. Research can occur without presidential support.

As "successful" research has been defined in this report, it is unlikely that research conducted without presidential support (or knowledge) will change existing practices. If the junior college president abrogates the responsibility of making his educational decisions as he finds the right answers to the right questions, little institutional research is likely to occur. Conversely, if the junior college president is committed to a strong program of institutional research, not only will the activity be supported, but it will probably be successful. The old adage rings true: "If the president wants it to happen, it will!"

JUNIOR COLLEGES AS CONSUMERS

Like other educational institutions, American junior colleges are consumers of new or innovative developments. Therefore, a junior college often purchases and installs a language laboratory because "other junior colleges have this type of lab." Rarely are the "right" questions asked, such as: "Will our students learn more with this equipment than with current devices?" or: "Are there other language laboratories on the market that result in better student learning?" Like many others in the education field, junior colleges buy first and worry about evaluation at a later date—if at all.

At the 1968 convention of the American Association of Junior Colleges, one of the key issues discussed was the "disadvantaged student in the junior college." Several of the speakers at this particular session emphasized that the problems of the disadvantaged varied tremendously from city to city, from region to region, and from junior college to junior college. The programs for the disadvantaged that prove effective in Oakland, California, may not be efficacious in Dalton, Georgia. The same can be said of almost all programs and endeavors in the two-year college. Public institutions are "community-oriented" and typically have the word "community" in their names. They are established to solve local problems, to be responsive to community needs and concerns. The junior college must be willing to design programs and instructional procedures to accommodate the peculiar needs of the local community. The emulation of the practices and programs of other two-year institutions does not necessarily lead to local improvement. The *same questions* need to be raised in all two-year colleges, but the answers may vary tremendously from one institution to another. Local differences must be accommodated and the "consumer approach" is probably not the best way to accomplish this objective. Junior colleges are going to have to find solutions to their own peculiar problems. A strong institutional research program is the most logical way to solve local problems.

A FINAL WORD

It is axiomatic that people always find time and ways to do the things that are really important to them. This is especially true when one examines present junior college institutional research endeavors. Canfield offers a comparison of schools and hospitals to demonstrate this lack of concern or commitment to improved practices.

> *Schools are much like hospitals—both being characterized by the diagnosis, treatment, and evaluation of human needs, one for health and the other for education. Schools differ from hospitals in that every student gets essentially the same treatment method (lecture/textbook), and treatment failures are explained largely on the basis of student (patient) inadequacies. This is a little like saying that our treatments are fine but we keep getting the wrong patients (students). If medical men had failed to persistently research and evaluate their treatments for disease, "bleeding" could have persisted as a standard treatment routine (4).*

Institutional evaluation is the president's responsibility. Questions like "How well do our students like our school?" and "How many of our students drop out each quarter and why?" are within his prerogative to ask. These then are examples of the right questions, and the president is the man who ultimately must ask them at his institution.

Appendix A:

INSTITUTIONAL RESEARCH REPORTS*

Study	Order No.	
A	ED 011 771	Fitch, Naomi. *The Employed Student and His Achievement Level at San Joaquin Delta Junior College.* Stockton, California: San Joaquin Delta College, 1966. 27 pp.
B	ED 010 734	Bissiri, August. *Disqualified Students Admitted to the Fall 1965 Semester.* Counseling Center Study 66-6. Los Angeles: Los Angeles City College, August 1966. 46 pp.
C	ED 013 609	Shore, Milton F., and Leiman, Alan H. "Parental Perceptions of the Student As Related to Academic Achievement in Junior College." *Journal of Experimental Education* 33: 391-394; Summer 1965.
D	ED 014 303	Anderson, Bert D. *Comparison of Enrolled and Non-Enrolled Applicants for Modesto Junior College, Fall 1966.* Report No. 2 Modesto, California: Modesto Junior College, September 1967. 22 pp.
E	ED 011 357 and	Pearce, Frank C. *Continuing Employment Through Training.* Stanislaus County Multi-Occupational Adult Training Project, Report No. 7. Modesto, California: Modesto Junior College, October 1966. 38 pp.
	ED 011 195	Pearce, Frank C. *Dropout Patterns in the New Hope Project.* Modesto, California: Modesto Junior College, October 1966. 20 pp.
F	ED 012 186	Moughamian, Henry. *A Profile of Chicago City College 1965 Graduates. Follow-up No. 2.* Chicago: Chicago City College, March 1967. 26 pp.
G	ED 012 580	Jost, Erwin. *High Verbal Aptitude and Grade Achievement: A Study of the Grade Achieve-*

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* All of these reports are available from the ERIC Document Reproduction Service: The National Cash Register Company, 4936 Fairmont Avenue, Bethesda, Maryland 20014. Consult *Research in Education* for price and purchasing instructions. The ED Order Number before each bibliographic entry can be used to locate the report in *Research in Education*.

ment of 200 First-Semester College of San Mateo Freshmen Who Ranked High in Verbal Aptitude As Measured by the School and College Ability Tests and Cooperative English Tests. San Mateo, California: College of San Mateo, July 7, 1966. 20 pp.

H ED 011 192 Gold, Benjamin Knox. *Placement Criteria and Academic Performance in English 1 and 21, Spring 1965.* Counseling Center Study 66-2. Los Angeles: Los Angeles City College, January 1966. 13 pp.

I ED 011 760 Risser, John J., and Davis, Elton C. *Study of Variables Associated with Final Grades in Mathematics Courses.* Psychological Services and Testing Research Report No. 6. Pasadena, California: Pasadena City College, October 1965. 6 pp.

J ED 011 191 Young, Edwin A. *Interrelationships Between Selected Psychological and Academic Measures in an Experimental Program for "Low-Ability" Students.* Counseling Center Study 65-2. Los Angeles: Los Angeles City College, March 1965. 14 pp.

K ED 012 623 Crawford, Margaret L. *Available Tests and Their Use in Research in Vocational Education.* Los Angeles: Los Angeles Trade-Technical College, March 1966. 40 pp.

L ED 010 677 Pearce, Frank C. *Basic Education Teachers—Seven Needed Qualities.* Modesto, California: Modesto Junior College, September 1966. 20 pp.

M ED 013 066 Overturf, C. L., and Price, Edwin C. *Student Rating of Faculty at St. Johns River Junior College, with Addendum for Albany Junior College.* Palatka, Florida: St. Johns River Junior College, 1966. 34 pp.

N ED 014 266 Orum, Earl. *A Study of the Need for Technical Training in Agriculture and Welding at Yuba College.* Marysville, California: Yuba College, August 31, 1965. 67 pp.

O ED 012 616 Boyce, R. Dudley. *Toward Innovation (The Golden West College Story).* Paper presented at the Invitational National Seminar on the Experimental Junior College, Palo Alto, California, February 23-26, 1967. Huntington Beach, California: Golden West College, February 28, 1967. 20 pp.

P ED 012 603 Thelen, Alice. *A Study of Academic Characteristics of General Curriculum Students After One Semester, One Year, in the General Curriculum Program.* St. Louis, Missouri: Forest Park Community College, September 12, 1966. 8 pp.

Q ED 012 166 Young, Edwin A. *An Experimental Program for "Low-Ability" Students (Second Progress Report).* Counseling Center Study 66-1. Los Angeles: Los Angeles City College, February 1966. 117 pp.

R ED 012 612 Machetanz, Frederick A. *Evaluation of the Threshold Program at Los Angeles Valley College.* Van Nuys, California: Los Angeles Valley College, June 24, 1965. 15 pp.

and

ED 012 613 Machetanz, Frederick A. *Evaluation of the Threshold Program at Los Angeles Valley College, Second Report.* Van Nuys, California: Los Angeles Valley College, October 5, 1966. 18 pp.

S ED 010 120 Shea, J. J. *PREP—A Program for Recovering and Extending Academic Potential for High School Underachievers Seeking Entrance at a Regional Community College.* BR-5-0569. Greenfield, Massachusetts: Greenfield Community College, June 1966. 51 pp.

T ED 012 583 Hopper, Harold H., and Keller, Helen. *Writing Skills—Are Large Classes Conducive to Effective Learning?* Fort Pierce, Florida: Indian River Junior College, 1966. 13 pp.

U ED 013 619 Hamilton, Robert S., and Heinkel, Otto A. *English A—An Evaluation of Programmed Instruction.* Research Report 67-7. San Diego, California: San Diego Mesa College, March 29, 1967. 20 pp.

V ED 012 620 Jolly, Joan, and Madden, Charles F. *Amplified Telephone As a Teaching Medium.* Educational Report 1. Columbia, Missouri: Stephens College, March 1965. 95 pp.

and

ED 012 621 Smith, Seymour. *Two Inter-Institutional Programs Utilizing Amplified Telephone Communication, Final Report*. Columbia, Missouri: Stephens College, September 1966. 26 pp.

W ED 013 593 College of San Mateo. *Health Education by Educational Television, A Preliminary Evaluation, 1964-65 Fall Semester*. San Mateo, California: College of San Mateo, December 1965. 57 pp.

X ED 014 291 Kunhart, William E., and Roleder, George. *Counseling Techniques with Potential Dropout Students in Junior College*. Walnut, California: Mt. San Antonio College, 1964. 5 pp.

Y ED 011 775 White, James H. *Transfer from Junior to Senior College, a Survey of Current Policies*. Rockville, Maryland: Montgomery Junior College, 1967. 11 pp.

Appendix B:

INSTITUTIONS PARTICIPATING IN NATIONAL SURVEY OF INSTITUTIONAL RESEARCH

1. Anne Arundel Community College
   Arnold, Maryland 21012
2. Bakersfield College
   Bakersfield, California 93305
3. Bronx Community College
   Bronx, New York 10468
4. Broome Technical Community College
   Binghamton, New York 13902
5. Cambridge Junior College
   Cambridge, Massachusetts 02140
6. Canton Community College
   Canton, Illinois 61520
7. Central Oregon Community College
   Bend, Oregon 97701
8. Central YMCA Community College
   Chicago, Illinois 60606
9. Christian College
   Columbia, Missouri 65201
10. Christopher College of Corpus Christi
    Corpus Christi, Texas 78404
11. City College of San Francisco
    San Francisco, California 94112
12. Clarendon College
    Clarendon, Texas 79226
13. Concordia Junior College
    Bronxville, New York 10708
14. Concordia Lutheran College
    Austin, Texas 78705
15. Contra Costa College
    San Pablo, California 94806
16. Cooke County Junior College
    Gainesville, Texas 76240
17. Cuyahoga Community College
    Metropolitan Campus
    Cleveland, Ohio 44115
18. Daytona Beach Junior College
    Daytona Beach, Florida 32015
19. De Lima Junior College
    Oxford, Michigan 48051
20. Dodge City Community Junior College
    Dodge City, Kansas 67801
21. Durham Technical Institute
    Durham, North Carolina 27703
22. Dutchess Community College
    Poughkeepsie, New York 12601
23. Eagle Grove Junior College
    Eagle Grove, Iowa 50533
24. Edison Junior College
    Fort Myers, Florida 33901
25. Fairbury Junior College
    Fairbury, Nebraska 68352
26. Frederick Community College
    Frederick, Maryland 21701
27. Gainesville Junior College
    Gainesville, Georgia 30501
28. Glendale Community College
    Glendale, Arizona 85301
29. Hibbing State Junior College
    Hibbing, Minnesota 55746
30. Highland Community College
    Freeport, Illinois 61032

31. Hutchinson Community
Junior College
Hutchinson, Kansas 67501

32. Junior College of St. John's
University
Jamaica, New York 11432

33. Lindsey Wilson College
Columbia, Kentucky 42728

34. Manor Junior College
Jenkintown, Pennsylvania
19046

35. Massachusetts Bay
Community College
Watertown, Massachusetts
02172

36. Meridian Junior College
Meridian, Mississippi 39301

37. Midway Junior College
Midway, Kentucky 40347

38. Monterey Peninsula College
Monterey, California 93940

39. Montreat-Anderson College
Montreat, North Carolina
28757

40. Morton Junior College
Cicero, Illinois 60650

41. Multnomah College
Portland, Oregon 97205

42. Neosho County Community
Junior College
Chanate, Kansas 66720

43. New Mexico State
University, Alamogordo
Branch
Alamogordo, New Mexico
88310

44. North Dakota State School
of Science
Wahpeton, North Dakota
58075

45. North Greenville Junior
College
Tigerville, South Carolina
29688

46. North Shore Community
College
Beverly, Massachusetts
01915

47. Pine Manor Junior College
Chestnut Hill,
Massachusetts 02167

48. Polk Junior College
Winter Haven, Florida 33830

49. Poteau Communtiy College
Poteau, Oklahoma 74953

50. Presentation College
Aberdeen, South Dakota
57401

51. Rhode Island Junior College
Providence, Rhode Island
02908

52. Sandhills Community
College
Southern Pines,
North Carolina 28387

53. Seminole Junior College
Seminole, Oklahoma 74868

54. South Georgia College
Douglas, Georgia 31533

55. Southern Seminary Junior
College
Buena Vista, Virginia 24416

56. Southwest Mississippi
Junior College
Summit, Mississippi 30666

57. Southwestern Community
College
Creston, Iowa 50801

58. Southwestern Oregon
Community College
Coos Bay, Oregon 97420

59. St. Clair Community College
Port Huron, Michigan 48060

60. St. Johns River Junior
College
Palatka, Florida 32077

61. St. Peter's College
Baltimore, Maryland 21229

62. St. Philip's College
San Antonio, Texas 78203

63. State University of
New York
Cobleskill Campus
Cobleskill, New York 12043

64. Suomi College
Hancock, Michigan 49930

65. Trinidad State Junior
College
Trinidad, Colorado 81082

66. Trinity Christian College
Palos Heights, Illinois 60463

67. Ventura College
Ventura, California 93003

68. Villa Maria College of
Buffalo
Buffalo, New York 14225

69. Waterbury State Technical
College
Waterbury, Connecticut
06708

70. Yuba College
Marysville, California 95901

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